

## **Background**

Based on the continuation of our “Big Thing” discussion, the SDT worked toward developing a conceptual “Vulnerability Framework” for ABoVE, which is attached below. There are four questions related to understanding and quantifying vulnerability that will be addressed during ABoVE. The SDT agreed that individual members will work on developing a single paragraph discussing the importance of each question, and that these paragraphs will be discussed during a teleconference that will be scheduled prior to the 2<sup>nd</sup> STD Meeting in Fairbanks in early July. During the meeting, several people agreed to lead the groups assigned to each question, and some members volunteered to serve on specific groups. Co-Chairs Dan and Eric would like all SDT members to participate in this exercise, and have assigned SDT members to specific groups.

The four questions, the key points for these questions, and the groups working on the questions are as follows:

### **1. In what ways are ecosystems changing?**

#### Key points

- Developing the baseline needed to assess change
- Types/modes, rates and trajectories of change
- Structural and functional aspects of change
- Spatial and temporal characteristics of change
- Relationship between the change and the driver of the change

Group Leaders: Natalie Boelman and Scott Goetz

Participants: Michelle Mack, Chip Miller, Ruth Varner, Colm Sweeney

### **2. Why are ecosystems changing?**

- Resilience and vulnerability
- External drivers vs. internal feedbacks
- Natural vs. anthropogenic drivers
- Physical, chemical, biological drivers
- Press vs. pulse disturbance
- Feedbacks (external)

Group Leaders: Forrest Hall and Eric Kasischke

Participants: Mike Rawlins, Guido Gross, Josh Fisher, Bob Harriss, Sharon Billings

### 3. How are ecosystem services affected?

- Which changes have the greatest impact
- Which services are altered the most and how quickly are they being altered
- New/emerging and redistribution of services in the ABR
- Linkages to initial ABoVE Science Questions (e.g., Climate regulation – feedbacks to climate and exports to coastal waters (e.g., water, DOM, sediment))

Group Leader: Libby Larson

Participants: Dave McGuire, Juha Metsaranta, Rob Streigl, Stan Wullschleger

### 4. How is society responding to changes?

- Risk assessment
- Public perceptions
- Adaptation and mitigation
- Local, regional, national, and global
- Short term vs. long-term
- Relative importance of ecosystem services in driving societal changes
- Individual vs. institutional responses
- Importance of responses to ecosystem services

Group Leader: Steve Colt

Participants: Jeremy Karchut, Matt Sturm

### ***Assignment***

The deliverable from each group will be a document delivered to Dan & Eric, by **28 May 2013**, outlining the main objectives and key components to be studied under each research question. Please think (and write) about why these key components need to be studied (justification), and how they relate to the other questions in the framework. This could be flushed out in text (paragraph) format, or simply as organized bullet points that capture the main messages. Dan & Eric will then compile the responses from each group, and begin to synthesize this information into prose of common language that will serve as a first draft of the compelling rationale for the ABoVE campaign to be ultimately included in the introductory material of the Concise Experiment Plan.

Question leaders please begin to organize the participants in your group and solicit feedback on your group assignment.

Research Framework for ABoVE.

